CLAIMS

1. A method of processing a data signal comprising receiving a data sequence incorporating PSK symbols,

separating the data sequence into bits of symbols,

assigning a confidence value to each bit in a symbol, and

effecting convolutional decoding of the bit stream associated with the assigned confidence values.

2. A method according to Claim 1 wherein the step of assigning a confidence value comprises mapping symbols to binary bits by means of a Gray code.

3. A method according to any preceding claim comprising incorporating data on the mapping determination in a look-up table for reference.

4. A method according to any preceding claim comprising re-coding hard decisions as an (I,Q) pair and taking soft decisions therefrom.

5. A method according to any preceding claim comprising demodulation by decision feedback equalisation with whitening matched filtering.

6. A method according to any preceding claim comprising using a digital processor (22) for equalisation.

7. A method according to any of Claims 1 to 5 using dedicated signal processing hardware (22) for equalisation.

8. A method according to any preceding claim comprising de-interleaving, de-puncturing and incremental redundancy steps before convolutional decoding.

9. A computer program product directly loadable into the internal memory of a digital computer, comprising software code portions for performing the steps of any one or more of Claims 1 to 8 when said product is run a computer.

10. Apparatus for processing a data signal comprising means to receive (10) a data sequence incorporating PSK symbols,

mapping means (28) to map the data sequence into bits of symbols and to assign a confidence value to each bit in the symbols, and

means (33) to effect convolutional decoding of the bit stream associated with the assigned confidence values.

11. Apparatus according to Claim 10 wherein the mapping means (28) is adapted to map symbols to binary bits by a Gray code.

12. Apparatus according to Claim 10 or 11 comprising a look-up table incorporating data on the mapping determination for reference.

13. Apparatus according to any of Claims 10 to 12 comprising means to re-code hard decisions as an (I,Q) pair and means to take soft decisions therefrom.

14. Apparatus according to any of Claims 10 to 13 comprising demodulation by decision feedback equalisation with whitening matched filtering.

15. Apparatus according to any of Claims 10 to 14 comprising a digital processor (22) for equalisation.

16. Apparatus according to any of Claims 10 to 15 comprising dedicated signal processing hardware (22) for equalisation.

17. Apparatus according to any of Claims 10 to 16 comprising means (30,31,32) to de-interleave, depuncture, and effect incremental redundancy before convolutional decoding.

18. A look-up table produced by the method of any one of Claims 1 to 9 or the apparatus of any one of Claims 10 to 17.